Contents

THE ORIGIN AND EARLY EVOLUTION OF TURTLES, *Olivier Rieppel and Robert R. Reisz* 1

USES OF EVOLUTIONARY THEORY IN THE HUMAN GENOME PROJECT, *Alan R. Templeton* 23

STREAMS IN MEDITERRANEAN CLIMATE REGIONS: ABIOTIC INFLUENCES AND BIOTIC RESPONSES TO PREDICTABLE SEASONAL EVENTS, *Avital Gasith and Vincent H. Resh* 51

CHOOSING THE APPROPRIATE SCALE OF RESERVES FOR CONSERVATION, *Mark W. Schwartz* 83

CONSPECIFIC SPERM AND POLLEN PRECEDENCE AND SPECIATION, *Daniel J. Howard* 109

GLOBAL AMPHIBIAN DECLINES: A PROBLEM IN APPLIED ECOLOGY, *Ross A. Alford and Stephen J. Richards* 133

USING PHYLOGENETIC APPROACHES FOR THE ANALYSIS OF PLANT BREEDING SYSTEM EVOLUTION, *Stephen G. Weller and Ann K. Sakai* 167

EVOLUTION OF DIVERSITY IN WARNING COLOR AND MIMICRY: POLYMORPHISMS, SHIFTING BALANCE, AND SPECIATION, *James Mallet and Mathieu Joron* 201

CONSEQUENCES OF EVOLVING WITH BACTERIAL SYMBIONTS: INSIGHTS FROM THE SQUID-VIBRIO ASSOCIATIONS, *Margaret J. McFall-Ngai* 235

THE RELATIONSHIP BETWEEN PRODUCTIVITY AND SPECIES RICHNESS, *R. B. Waide, M. R. Willig, C. F. Steiner, G. Mittelbach, L. Gough, S. I. Dodson, G. P. Juday, and R. Parmenter* 257

ANALYSIS OF SELECTION ON ENZYME POLYMORPHISMS, *Walter F. Eanes* 301

POLYMORPHISM IN SYSTEMATICS AND COMPARATIVE BIOLOGY, *John J. Wiens* 327

PHYSICAL-BIOLOGICAL COUPLING IN STREAMS: THE PERVASIVE EFFECTS OF FLOW ON BENTHIC ORGANISMS, *David D. Hart and Christopher M. Finelli* 363

ASTROBIOLOGY: EXPLORING THE ORIGINS, EVOLUTION, AND DISTRIBUTION OF LIFE IN THE UNIVERSE, *D. J. Des Marais and M. R. Walter* 397

EVOLUTION OF THE EASTERN ASIAN AND EASTERN NORTH AMERICAN DISJUNCT DISTRIBUTIONS IN FLOWERING PLANTS, *Jun Wen* 421

FULL OF SOUND AND FURY: THE RECENT HISTORY OF ANCIENT DNA, *Robert K. Wayne, Jennifer A. Leonard, and Alan Cooper* 457

DO PLANT POPULATIONS PURGE THEIR GENETIC LOAD? EFFECTS OF POPULATION SIZE AND MATING HISTORY ON INBREEDING DEPRESSION, *D. L. Byers and D. M. Waller* 479

HISTORICAL EXTINCTIONS IN THE SEA, *James T. Carlton, Jonathan B. Geller, Marjorie L. Reaka-Kudla, and Elliott A. Norse* 515

GENE FLOW AND INTROGRESSION FROM DOMESTICATED PLANTS INTO THEIR WILD RELATIVES, *Norman C. Ellstrand, Honor C. Prentice, and James F. Hancock* 539

RESISTANCE OF HYBRID PLANTS AND ANIMALS TO HERBIVORES, PATHOGENS, AND PARASITES, *Robert S. Fritz, Catherine Moulia, and George Newcombe* 565

EVOLUTIONARY COMPUTATION: AN OVERVIEW, *Melanie Mitchell and Charles E. Taylor* 593

INDEXES

Subject Index 617

Cumulative Index of Contributing Authors, Volumes 26–30 631

Cumulative Index of Chapter Titles, Volumes 26–30 635

Subject Index

A
Abiotic regulation
  of assemblage structure, 66–67
  on streams in Mediterranean climate regions, 51–81
Accelerated transitions (ACCTRAN), 187
Acidification, and amphibian declines, 139–40
Acid tolerance, 139
Acoustic Doppler velocimeters (ADVs), 381
Acromion, 8–10
Adansonia, 179
Adaptive surfaces, and evolution of genetic systems, 610–12
ADH
  in *Drosophila*, 310–11
Admixture, migration and, 466
Advection-diffusion theory, 368, 380
ADVs
  See Acoustic Doppler velocimeters
Aesculus, 435
AGRICOLA bibliographic database, 543
Algae, 368
Algorithms
  evolutionary, 596–98
  genetic, 594–95
  population-based, 595–96
Allee Effect, 530
Alleles
  deleterious, 481, 485, 552
  favorable, 553
  null, 309–10
Allochthonous organic matter
  retention and transport of, 58–59
  riparian inputs of, 57–58
Allozyme polymorphism, 310–14
  defining mutational landscape for variation, 302–6
  future studies, 346
Allozyme progeny analysis, 547
Allozymes, and flux in pathway theory, 308–9
Alpha taxonomy, 328–29
Alsinidendron, dioecy in, 191–92
Alzheimer's disease, 26–27, 30–31
Amino acid polymorphisms, 305, 315
Amniotes
  distinction of turtles from, 7
  relationships, 2
Amphibian metapopulation biology, 153–55
  models of, 154–55
Amphibian populations
  autecology of, 134
  behavior over time, 145–49
  defining and studying, 142–49
  global declines in, 133–65
  mark-recapture studies of, 153–54
  monitoring and censusing techniques, 142
  potential causes of declines, 135–42
  problems with studying breeding aggregations, 142–43
Amphiphilic compounds, 405
Amsinckia, 178–79
Ancient DNA (aDNA), 457–77
  authenticating, 462
  defining, 458
  future of research into, 464–68
  history of, 458–62
  preserving, 462–64
Androdioecy, origin of, 191
Anemometry, hot-film, 380
Animals, resistance of hybrid, 565–91
Annual net primary productivity (ANPP), 269
Annual Reviews website, 146, 276
Anthropogenic processes, 526
Any instance coding, 332
Aphelandra, pollination systems in, 192–93
Aposematism, evolution of novel warning colors in, 206–13
Apparency-dependent warning color, 210–11
Aquatic ecosystems, 264–67
  lakes, 264–66
  wetlands, 266–67
Aquatic organisms, distribution and abundance of, 62–64

Aquilegia, 188–89
Arachis hypogea, 550
Aralia, 428, 433–34, 437–39
Archaeological material, 463–64
Arctic tundra, 267, 269–70
Arid ecosystems, 269, 271–72
Artemmisid tridentata tredentata, 579
Artificial hybrids, 438
Artificial intelligence, 593
Asia, disjunct distributions of flowering plants in Eastern, 421–55
Aspicularis tetraptera, 579
Astragalo-calcaneal complex, 10–11
Astrobiology, 397–416
  key components of, 399
  mandate of, 398–99
Attack fraction, 222
Autotrophy, *versus* heterotrophy, 67–68

B

Backcross hybrids, 567
Bacteria-induced cell loss, 248–50
Bacterial development, 250–51
Bacterial symbionts
  consequences of evolving with, 235–56
  during colonization process, 240–41
  luminous, 237–38
Balance, shifting in diversity, 201–34
Baldwin effect, 607–9
Barley, 546–47
Batesian overload, 216–17
Beans, 548–49
Beneficial gene flow, 553
Benthic flow fields, quantification and manipulation of, 380–84
Benthic organisms
  dispersal of, 367–70
  flow effects on, 363–94
  macroinvertebrate, 65
Bering land bridge, 439–40, 463
Bias, codon, 316–17
Biodiversity
  future studies, 287–89
  hotspots of, 97
  on hybrids, 585
  loss worldwide, 263
  preserving, 84
Biogeochemical cycles, 408
Biogeographic discontinuities, 427, 434–36
Biology, evolutionary, 605–12
Biomarkers, 410, 412
  geological context of, 414
Biomass, 286, 496
  See also Productivity
Biome-specific relationships, 264–75
  aquatic ecosystems, 264–67
  terrestrial ecosystems, 267–75
Biosphere Equation, 400
Biosphere evolution, 406–9
  in other solar systems, 415–16
  in our solar system, 412–14
Biotic regulation
  of assemblage structure, 66–67
  to predictable seasonal events in Mediterranean climate regions, 51–81
Blind Watchmaker program, 604–5
Boreal forests, 273–75
Boundary layer theory, 376
Branch length effects, 340–41, 346
Brassica napus, 549–50
BRCA 1, 38, 40
Breast cancer, 38
Breeding systems
  detecting homology in, 189–90
  evolution of plant, 167–99
  maintaining under laboratory conditions, 238
  problems with studying in amphibian populations, 142–43
Buffer habitats, 95

C

Candidate loci
  in Human Genome Project, 25–32
Canola, 549–50
Captorhinids
  turtle relationships with, 2
Cause and effect, inferring from phylogeny, 187–89
Cell loss, bacteria-induced, 248–50
Cell-shaped objects, 413
Censusing, in amphibian populations, 142
Cerithidea extinction, 516, 528–29
CFUs
  See Colony-forming units
Character-based species delimitation, 352–54
Character evolution, predicting usefulness for analyzing, 193–95
Characters
  coding, ordering, and weighting, 184–85
  complex, 194
  downweighting based on homoplasy, 338
  inclusion or exclusion of, 180–84
  mapping, 187, 194
  palatal, 13
Chimeric molecules, 460

Clade analysis, 5–6, 168
basal, 178
nested, 28–32
Cladophora glomerata, 68
Climate
and amphibian declines, 140–41
global change, 141
Mediterranean region, 53–54
Cloning, positional, 32
Coalescent theory, 347
Coarse-filter conservation, 87–90
objectives with fine-filter targets, 95
Coarse particulate organic matter (CPOM)
accumulation of, 58–59
microbial processing of, 67
Coastal marshes, 266–67
Coding characters, 184–85
methods, 332–35
polymorphic, 329, 348–49
Codon bias, and deleterious mutation, 316–17
Coevolutionary chase, 216–17
Colias, PGI in, 313–14
Colonization, 136, 484
Colony-forming units (CFUs), 240–41
Coloration, defensive, 201–34
Commercial extinctions, 517
Common bean, 548–49
Community effects, of hybrid-parasite interactions, 584–86
Comparative biology, polymorphisms in systematics and, 327–62
Comparative evolutionary studies, 348–51
Competition, 373–75
See also Sperm competition
Complex character traits, evolution of, 194
Computational ecologies, evolution of, 610
Computational modeling, 593–616
Computer applications
See Evolutionary computation; Simulation analyses
Confidence coding, 334
Congruence analyses, 335–42
Conservation
choosing appropriate scale for reserves, 83–108
coarse-filter, 87–90, 94–95
fine-filter, 84–87, 94–95
predicting value, 96–97
Conservation management, 99
Consistency Index, 5, 13
Conspecific sperm and pollen precedence
effectiveness as reproductive barrier, 116–17
evolution of, 120–24
mechanisms of, 117–19
prevalence of, 119–20
and speciation, 109–32
Constraints, 436
Context dependency, 38
Continuous maximum likelihood (CONTML), 331–32, 336
Convergence, 14–17
Coprolites, 467
Coral reef extinctions, theoretical estimations of, 525–27
Coronary artery disease (CAD), risk factors in, 25
Cottonseed, 547
CPOM
See Coarse particulate organic matter
Cross compatibility, 438
Cross-fertilization, 480
Cryptic prey, evolution of novel warning colors in, 206–13
Culture, and social evolution, 609
Cyamodus, 3

D

Dalechampia, 193
Dams, 69, 384–85
Data matrices, changes to global, 2–5
Data searches, 276–77
Datisca, androdioecy in, 191
Defensive coloration, 201–34
Delayed transitions (DELTRAN), 187
Deleterious alleles, 481, 485, 552
Deleterious mutation, codon bias and, 316–17
Dendograms, 283
Density-dependence
emigration, 374
warning color, 210–11
Department of Interior, 85
Dependency
context, 38
See also Frequency-dependence
Dermal armor, 6–8
as osmotic barrier, 16
Deserts, 269, 271–72
Detrimental gene flow, 552–53
Detrivores, 370
Diel rhythm, 251
Diervilla, 431
Differentiation, patterns of, 436–39
Diffusion, limitation of, 372–73
Dimorphism, in mimicry, 213–24

Dioecy
evolution of, 191–92
shifts to, 187
Diphylleia, 428, 433
Diploid genotypes, 28
Disa, 181
Discordance, between overall similarity and phylogenetic relationships, 437–38
Disease associations
in amphibian declines, 140
ancient DNA and, 467–68
in Human Genome Project, 24–34
Disjunct distributions
evolution of, 421–55
future studies, 443, 446
historical explanations, 440–41
origins and development of, 439–42
plant taxa demonstrating, 423–27
Dispersal
of benthic organisms, 367–70
long distance hypothesis, 441
Dispersal corridors, 96
Distributions
of effects in selection, 483
evolution of disjunct, 421–55
of life, 397–416
Disturbance regimes, 65
Divergence, estimates of times of, 442, 444–45
Diversity
effect on productivity, 260–63
higher species, 438–39
mechanisms thought to affect patterns of, 259
in warning color and mimicry, 201–34
See also Biodiversity; Genetic diversity; Mimetic diversity
DNA
authenticating, 462
contaminated, 461
aDNA.
See Ancient DNA
mtDNA sequences, 460
DNA sequencing, 302–7
case studies, 310–14
future studies, 314–18, 346–48
historical dimension, 306–7
Domesticated plants, and their wild relatives, 539–63
Dominance, 481–82
genetic, 307–8
in hybrid resistance, 566–67
Drake Equation, 400
Drosophila melanogaster, 482–83, 607–8
ADH in, 310–11
G6PD in, 311–14
Drought, 56, 371–72
Drug design, 597
Dry beans, 548–49
Drying
assemblage response, 62–64
ecosystem and aquatic biota response to, 59–71
expected response, 59–62
species related to, 64–66
structuring role, 55–56

E

Early life
geologic record of, 408–9
living record of, 407–8
Eastern Asia, disjunct distributions of flowering plants in, 421–55
Eastern North America, disjunct distributions of flowering plants in, 421–55
Ecological processes, 176
flow effects on, 365–76
relationship with primary productivity, 287–88
Ecological theory, 284–87
Ecology
applied, 133–65
computational studies of, 610
and paleoecology, 467
Ecosystem evolution, 406–9
Ecosystem management, 88–90
evaluation in, 89
Ecosystems
importance of diversity for maintaining, 262–63
models of, 288
and numbers of species, 258
Edge effects, 96
Eichhornia, 183–84
Eleusine coracana, 548
Endangered species
See Extinctions; Neoextinctions
Endangered Species Act (ESA), 85–87
a benchmark for societal values, 99
Endemism, 64
Entrainment, passive, 367
Environmental factors
interactions among and amphibian declines, 141–42
problem-solving, 384–85
stress, 242–45

Environmental toxicants, and amphibian declines, 139–40
Enzyme polymorphism
selection on, 301–26
structure-function relationships and, 314–15
Epidemics, and amphibian declines, 140
Epistasis, 36
synergistic, 485
Erythrina, 179–80, 182–83
ESA
See Endangered Species Act
Estimating, population size, 143–45
ESUs
See Evolutionary significant units
Eucalyptus, 583–84
Euprymna scolopes, 237
development of light organ in, 247–51
Europa, search for life on, 414
Evapotranspiration, 56
Evolution, 593–94
of diversity in warning color and mimicry, 201–34
of flowering plants, 421–55
of genetic systems, 610–12
of increased selfing, 484
of life in universe, 397–416
of mating systems, 484–85, 502–3
on molecular, organism, ecosystem, and biosphere levels, 406–9
of plant reproductive systems, 167–99
rates of, 442
of turtles, 1–22
of weeds, 554–56
Evolutionary algorithms
commercial applications, 596–98
scientific applications, 598–605
Evolutionary biology, relevance of evolutionary computation in, 605–12
Evolutionary computation, 593–616
educational applications of, 603–5
history of, 595–96
Evolutionary dynamics
of gene flow, 551–53
tradition of, 207, 328
Evolutionary significant units (ESUs), 85, 524
Evolutionary theory
Baldwin effect, 607–9
comparative, 348–51
and convergence, 14–17
Darwinian evolution, 603, 607
in the Human Genome Project, 23–49
Lamarckian evolution, 606–7
necessity for historical approaches, 168–77
Experimental design, effect on purging, 500–1
Extinction risk, 86–87, 485
from hybridization, 556–57
Extinctions
in the sea, 515–38
spatial and functional scales of, 516–17
susceptibility of marine organisms to, 529–31
theoretical estimations of, 525–27
of wild relatives, 556–57
Extinct species
establishing a list of, 517–20
marine birds and mammals, 520–21
marine invertebrates, 520, 523–24
systematics of recent, 464–65

F

FAOSTAT Statistics Database, 542
Favorable alleles, 553
Felsenstein Zone effect, 338–41
Fertilization
components of in flowering plants, 118–19
evolution of traits and proteins related to, 121–22
mechanisms of, 119
See also Sperm-egg interactions
Fine-filter conservation, 84–87
for coarse-filter objectives, 95
successes of, 100
Fire, managed, 93
Fish communities
colonization of fish-free water bodies by, 136
in Mediterranean-type streams, 63–64
recovery rate of, 66
species richness in, 265
Fitch-Margoliash, 336, 339
Fitness
broad plateaus of, 611
hybridization and, 580, 582–84
Flagships, 95
Flocculation, turbulence-induced, 372
Flooding
assemblage response, 62–64

ecosystem and aquatic biota response to, 59–71
expected response, 59–62
species related to, 64–66
structuring role, 55–56
Floristic affinity, 422
Floristic exchanges, 440
Flow effects
on benthic organisms, 363–94
dislodgement, 368
on ecological processes, 365–76
future studies, 385
measuring, 382–83
on riparian vegetation, 69–71
short-term, 378
sources and scales of, 376–80
Flowering plants
components of fertilization in, 118–19
evolution of, 421–55
morphology of, 488
Flow-mediated transport, 367–70
Flowmeters, 381
Fluid mechanics, 364
computational methods, 379–80
Fluvial geomorphology, 367
Flux, and allozymes in pathway theory, 308–9
Food crops, world's most important, 542–51
Foraging strategies, evolving optimal, 598–602
Forested streams, retentive capacity of, 58–59
Forests
boreal, 273–75
clear-cut, 137
tropical, 272–73
Fossil evidence, 438, 442
Founder events, 33
FREQPARS program, 335
Frequency dependence
mimetic diversity and the form of, 226
shape of, 223–24
Frequency parsimony
methods of coding, 334–35
objections to, 342–44
Fresh water marshes, 266–67
Functional extinctions, 516–17, 520
Functional groups, 258
Fundulus heroclitus, LDH in, 313
Fungal pathogens, 566, 586

G

Gaia hypothesis, 399
Gametic incompatibility, 116
Gap analysis, 97–98
Gene adaptations, 215
Gene flow
beneficial, 553
case studies, 542–51
consequences of, 553–57
detrimental, 552–53
from domesticated plants to their wild relatives, 541–51
evolutionary consequences of, 551–53
by hybridization, 541
and introgression, 539–63
natural, 552
Genes, "disappearing," 38
Genetic algorithms (GAs), 594–95
for evolving sorting networks, 602–3
Genetic architecture, 35–39
evolution of, 610–12
mimetic polymorphism and, 214–16
Genetic diversity, over time, 465–66
Genetic dominance, in pathway theory, 307–8
Genetic drift, and shifting balance, 211–13
Genetic hazards, in small and inbred populations, 485–86
Genetic load, purging plant populations of, 479–513
Genetic paleopathology, 467–68
Genetic programming, for evolving foraging strategies, 598–602
Genetic recombination, 567
Genetics
plant conservation, 539–63
See also Human Genome Project; Molecular genetics
Genetic variance
partitioning, 38
reduced, 485
Geologic record, of early life, 408–9
Gleditsia, 428–29
Global extinctions, 517–24
Glucose 'metabolism, 303
Glycine max, 546
Glycolytic pathway, 303
Gordonia, 429
Gossypium hirsutum, 547
G6PD, in *Drosophila*, 311–13
Gray's hypothesis, 440
Green beans, 548–49
"Green-beard" selection, 211
Greenhouse gasses, 401–2
Groundnut, 550

H

Habitat Conservation Plans (HCPs), 87
Habitat modification, and amphibian declines, 137–39
Habitats
effects of flow on, 370–71
loss of, 66, 91
on Mars, 413

protecting, 87
use of, 370–73
Haliotis sorenseni extinction, 517, 530
Hamamelis, 429
Hamming distance, 612
Haplotype trees, 27–29, 354
nested, 30–31
Hardy-Weinberg equilibrium, 343
Hazards
See Genetic hazards
HCPs
See Habitat Conservation Plans
Helianthus annuus, 550–51
Heliconius, 210, 213, 215–16, 223–24
Herbivores
differences from pathogens, 585
resistance of hybrid plants to, 565–91
Herbivory, studies of, 568–80
Heritable variation, 328
Heterospecific matings, 113
Heterotrophy, *versus* autotrophy, 67–68
HGP
See Human Genome Project
Hierarchical reserve design, 95–96
Higher species diversity, 438–39
Historical extinctions, in the sea, 515–38
Historic range of variability (HRV) values, 90
Holistic reserves, 93–94
Homology
detecting in reproductive systems, 189
true, 194
Homoplasy, 177–78
detecting, 189
downweighting characters based on, 338
increased, 5, 12
and intraspecific variability, 336
reinterpreting, 194
Homoplasy Index, 12–13
Hordeum vulgare, 546–47
Host life cycle, 238
Host organ, embryonic development of, 239–40
Host-parasite coevolution, 602–3
Hot deserts, 269, 271–72
Hotspots, 96–97
HRV
See Historic range of variability
Human Genome Project (HGP)
candidate loci, 25–32
disease associations in, 24–34
evolutionary theory in, 23–49
new research focus on, 36
QTL mapping through linkage associations within families, 32
QTL mapping through linkage disequilibrium in populations, 32–34
Human impact
associated with competition for water, 68–71
ecosystem and aquatic biota response to, 59–71
expected response, 59–62
Human population structure, diseases with genetic component in, 35
Human predation, 529–30, 532
Huntington's chorea, 32
Hurricane Hugo, 141
Hybridization
drops in seed production by, 114
and fitness, 582–84
gene flow by, 541
rates of, 556–57
spontaneous, 540, 542, 550
studies of, 565–66, 568–80
See also Artificial hybrids
Hybrid-parasite interactions, 566
community effects of, 584–86
Hybrid resistance, 565–91
and fitness of hybrids, 582–84
mechanisms of, 580–82
Mendelian models of, 567–68
and parasite load on naturally occurring hybrids, 582
patterns of, 568–80
quantitative models of, 566–67
Hybrids
biodiversity on, 585
tritrophic effects of parasites on, 585–86
Hybrid zones, 565–66, 578
dynamics of, 583
Hydrangea, 429, 433
Hydraulic engineering, 367, 376, 379
Hydrodynamic processes, 369, 380
dead zones, 371
Hydrologic regime, in Mediterranean-type streams, 54–55
Hyporheic zone, 371

I

ID
See Inbreeding depression
Inbred populations, genetic hazards in, 485–86

Inbreeding
coefficient of, 489
reliably inferring history of, 488–89, 495
Inbreeding depression (ID)
approach to, 487
effects of population size and mating history on, 479–513
estimating, 489–90
future studies, 504
genetic basis of, 501–2
interest in, 480–81
mechanisms of, 481–82
Indicator species, 96–97
Insertion-deletion polymorphism, 310
Instream transport, 378–79
Interactions among environmental factors, and amphibian declines, 141–42
Intercontinental disjuncts, 438
Intercontinental species pairs, 422
Intercostal muscles, atrophying during embryonic development, 15
Intraspecific variability, homoplasy and, 336
Introgression, gene flow and, 539–63
Invertebrates, stream, 367–68
Ipomea purpurea, 480, 502
Island biogeographic theory, 90

K

Key innovations, presumed, 188
Kin-founding, 211
Kin selection, 211
Krebs cycle, 303

L

Lakes, 264–66
phytoplankton in, 265
zooplankton in, 265–66
Lamarckian Evolution, 606–7
Language learning, 609
LDH
in *Fundulus*, 313
Lepechinia, 183
Life
basic issues of, 400
beyond earth, 409–12
distribution of, 397–416
living record of early, 407–8
origins of, 404–6
universal principles of, 410–12
Life history traits, effect on purging, 500–1
Ligand-receptor interactions, 246
Linanthus, 179
Linaria vulgaris, 480
Lineages within a population, purging among, 487–88
Linkage disequilibrium, 26
Lipoprotein lipase locus (LPL), 25–26
Liquidambar, 435
Liriodendron, 423
Litoria genimaculata, 143–45
Load
parasites on naturally occurring hybrids, 582
purging of mutational, 491
selection against, 482–84
Lobelia, 499
Local extinctions, 516–17
Long distance dispersal hypothesis, 441

M

Macroinvertebrates, benthic, 65
Magnolia, 429, 433, 459
Maize, 546
Majority coding, 332
Mammalian myeloperoxidase (MPO), 242–43
Manhattan distance, 332, 335
Mapping characters, 187, 194
Marine environments
historical extinctions in, 515–38
neoextinctions in, 523–29
Marine organisms, susceptibility to extinction, 529–31
Mark-recapture studies, of amphibian populations, 153–54
Mars, 412–14
Surveyor Program, 402, 403–4
Marshes, 266–67
Mating, spontaneous, 540
Mating history, effects on inbreeding depression, 479–513
Mating system evolution, 484–85, 502–3
Maximum likelihood method, 331–32
Mediterranean climate regions, predictable seasonal events in, 51–81
Mendelian models
of disease, 24
of hybrid resistance, 567–68
Meta-analyses, of purging, 490–92, 497
Metapopulation biology
amphibian, 153–55
models of, 154–55
Metatarsal, hooked fifth, 11–12
Metazoans, evolution of, 235
Microorganisms, affect on Earth's crust, 408–9
Migration, and admixture, 466

Millets, 548
Mimetic diversity, and the form of frequency dependence, 226
Mimetic polymorphism, 213–24
and genetic architecture, 214–16
Mimetic selection, spatial and temporal variation in, 222–23
Mimetic species, 203–4
Mimicry
dimorphism in, 213–24
evolution of diversity in, 201–34
intraspecific, 204, 207
multiple rings of, 225
sex-linked, 213–14
and speciation, 224–25
Mimulus, 482–83, 487, 496, 500, 503
Minerals, extraterrestrial, 413–14
Minimum set algorithms, 97–98
Missing coding, 332
Modal coding, 332
Molecular clocks, calibrating, 442
Molecular data sets, 177–78, 438
estimates of times of divergence, 442
phylogenetic relationships based on, 428–34
Molecular evolution, 315, 406–9
Molecular genetics, impact on complex diseases, 24–25
Molecular systematics, 469
Molecules, chimeric, 460
Monitoring, in amphibian populations, 142
Morphological data sets, 177–78, 185, 355
future studies, 345–46
phylogenetic relationships based on, 428–34
See also Polymorphisms
Morphological intermediacy, 541, 543
Morphological stasis, 436–37
MPO
See Mammalian myeloperoxidase (MPO)
Müllerian mimicry, 204, 210, 216–24
intraspecific, 207
Muller's ratchet, 483
Multiple mimicry rings
evolution of maintenance of, 225
selection for convergence, 225
Mus musculus musculus/domesticus, 579, 581
Mutational dynamics, 468
Mutational landscape, defining for allozyme variation, 302–6
Mutational load, purging of, 491
Mutationist theory, 214–15
Mutations
deleterious, 316–17
nonrandom, 34
Mytilus extinction, 527–28

N

National Aeronautics and Space Administration (NASA), 402
Natural gene flow, 552
Naturally occurring hybrids, parasite load on, 582
Natural selection
positive, 317
strong, 224
Neighbor-joining, 336, 339
Neoextinctions, global marine, 517–24
Net primary productivity (NPP), 258, 269, 272–73
Networks, genetic algorithms (GAs) for evolving sorting, 602–3
Neural network model, training an artificial, 209–10
Noninvasive typing, 458
North America, disjunct distributions of flowering plants in Eastern, 421–55
North Atlantic land bridge, 440
Novel warning colors
evolution of, 206–13
and recognizability, 208
NPP
See Net primary productivity
Null alleles, in pathway theory, 309–10
Nyssa, 429–30

O

Ocean
See Seas
Odor-mediated searching behavior, 372–73
Ontogenetic repatterning, 11
Ordering characters, 184–85
Organic matter, extraterrestrial, 413–14
Organism evolution, 406–9
Organism-flow interactions, 379, 381, 384–85
Origins of life, 397–416
Origins Program, 401
Orogenies, 439
Oryza, 545
Outbreeding depression, 556
Outcrossing, 486, 489–90, 497

Outgroups, identifying appropriate, 178–79
Overall similarity, discordance with phylogenetic relationships, 437–38
Overdominance, 482
Owenetta, 2
Owen & Owen effect, 220
Ozone, depletion of stratospheric, 135

P

PAA
See Population aggregation analysis
Palatability spectrum, 217–22
mimicry and, 218–19
polymorphisms and, 216–24
Palatal characters, 13
Paleobiology, 4–5
of turtles, 1–22
Paleoecology, ecology and, 467
Paleopathology, genetic, 467–68
Panax, 421, 430–31
Paraphyletic taxa, 422
Parasite responses to hybrids, 565–91
generalist *versus* specialist, 584–85
load on naturally occurring hybrids, 582
load on parental species, 584
tritrophic, 585–86
variability in, 580
See also Host-parasite coevolution
Pareiasaurs
anatomical data on, 2
turtles sister group to, 5
Parkia, 182–83
Parsimony
methods of coding, 331, 334–35
principle of, 176–77
Pathogens, resistance of hybrid animals and plants to, 565–91
Pathway theory, 307–10, 317–18, 365
allozymes and flux, 308–9
genetic dominance, 307–8
and null alleles, 309–10
Patterns
of differentiation, 436–39
enhancement and peak-shift in, 209–10
of marine vertebrate neoextinctions, 523–24
of productivity-diversity, 278–79, 281–82
of purging, 492–95
of resource partitioning, 374
surveying, 276–87
PCR cycles, 460–62
Peak-shift
pattern enhancement and, 209–10
theory of behavioral, 209
Peanut, 550
Peripheral isolate model, of speciation, 339
Permafrost soil, 274
PGI, in *Colias*, 313–14
pH, effect on amphibians, 139
Phaseolus vulgaris, 548–49
Phenotypic variance, 37–38
Phyllonorycter, 586
Phylogenetic analysis
data sets, 428–31
of plant reproductive system evolution, 167–99
of polymorphic data, 335–42
Phylogenetic approaches
case studies, 169–75
inferring cause and effect using, 187–89
insights from, 190–93
limitations of, 185–87
predicting usefulness for analyzing character evolution, 193–95
Phylogenetic relationships, 431–34
discordance with overall similarity, 437–38
Phylogenies
constructing, 177–87
and convergence, 14–17
information content of morphological characters, 12–13
ITS, 428–30
reconstructing, 330–48
and temporal occurrence of reptilia, 4–5
Physical-biological coupling, in streams, 363–94
Phytoplankton, 265
Pinus palustris ecosystems, 89
Placodonts, 1
coding, 3
Planetary systems
abundance of, 400–1
controls on habitability of, 401–2
extrasolar habitable zones, 402–3
habitable, 400–4
subsurface habitable zones, 403–4
Plant conservation genetics, 539–63
Plant populations, purging genetic load of, 479–513
Plants
analyzing evolution of reproductive systems in, 167–99

resistance of hybrid, 565–91
species-area curves of diversity in, 91–92
See also Domesticated plants; Flowering plants
Plastron, development of, 16
Pleiotropic fitness effects, 555
Pollen precedence, and speciation, 109–32
Pollination biology, evolution of, 193
Pollination systems, 192–93
mixed, 114
Polymorphisms, 201–34
allozyme, 310–14
coding, 332, 334, 348–49
defined, 328
enzyme, 301–26
future studies, 345–48
insertion-deletion, 310
maintenance of, 214, 223–24
in mimicry, 213–24
and the palatability spectrum, 216–24
phylogenetic analysis of, 335–42
and species delimitation, 351–55
in systematics, 327–62
Polyphyletic taxa, 422
Polyspermy-avoidance-hypothesis, 122–23
Population aggregation analysis (PAA), 352–53
Population-based algorithms, 595–96
Population behavior
correlations with time, 150–53
effects of sampling intensity in estimating, 143–45
numerical model of, 148–49
simple model of, 146–48
Population genetics theory, 342–43, 347
Populations
lineages within, 497, 499
purging among, 496
Population size, 489
effect on inbreeding depression, 479–513
Population structure, and the evolution of warning color and unpalatability, 205–13
Preadaptation, 208
Precambrian era, 408–9
Precedence
sperm and pollen, 109–32
terminology for, 110–11
Predation, human, 529–30, 532
Predator-prey interactions, 137, 222, 375–76
and amphibian declines, 136–37
Primary homologies
acromion, 8–10
astragalo-calcaneal complex, 10–11
dermal armor, 6–8
hooked fifth metatarsal, 11–12
statements of, 6–12
Primary productivity, 264–89
Prisoner's dilemma, 609
Productivity
experimental manipulation of, 258
future studies, 287–89
and nutrient-use efficiency, 261
relationship with species richness, 257–300
Proganochelys, 7–12
in Germanic Triassic, 16
reconstruction of, 14–15
Protein evolution, 315
Purging
among lineages within a population, 487–88
among populations within species, 487
among taxa, 487
consistency of, 499–500
effectiveness of, 480
genetic load of plant populations, 479–513
limits of, 500–2
methods of analysis and meta-analysis of, 490–92
of mutational load, 491
paradoxes of, 486

Q

QTL mapping
through linkage associations within families, 32
through linkage disequilibrium in populations, 32–34
Quasi-Batesian mimicry, 217, 219–21
Quasi-Müllerian mimicry, 217

R

Raja laevis near-extinction, 531
Rapeseed, 549–50
Receptor-ligand interactions, 246
Recognition
and novelty, 208
and specificity, 241–47
Refugia, intertidal, 516
Regional extinctions, 517
Reproductive barriers, 109–10, 115
history of study of, 111–13
isolation, 110

Reptilia, phylogeny and temporal occurrence of, 4–5
Reserves
  core areas, 95
  hierarchical design of, 95–96
  holistic, 93–94
  single large or several small (SLOSS), 92
  small scale, 90–93
  See also Conservation
Reserve selection, 97–98
Resistance, of hybrid animals and plants, 565–91
Resources
  acquiring, 372–74
  patterns of partitioning, 374
Restriction-site data, 347
Revegetation sites, 139
Rheotaxis, 373
Rice, 545
Riparian vegetation, 57
  and changes in flows, 69–71
Ritland comparisons, 490
tRNA, describing, 611

S

Saccharum officinarum, 551
Salt marshes, 266–67
Sampling intensity
  effects on estimating population size, 143–45
  size effects, 338, 343
Sauria, hooked fifth metatarsal in, 11–12
Sauropterygia, 2
  sister group relationship with turtles, 17
Scaled coding, 334
Scales
  comparative, 487–88
  ecological, 277, 279–80
  factors in selecting, 83–108, 284–85
  of flow effects, 376–80
  geographical, 277, 279–80, 285
  integrating across, 94–98
  large, 94
  spatial, 90–94, 263–64
Scheduling procedures, designing, 597
Schiedea, 181, 186, 188, 490
  dioecy in, 191–92
Seas
  characteristics of, 531–32
  historical extinctions in, 515–38
  trawling in, 531
Seasonal events, biotic responses to predictable, 51–81
Sediment particles, passive entrainment of, 367
Selection
  distribution of effects in, 483
  on enzyme polymorphisms, 301–26
  "green-beard," 211
  kin, 211
  against the load, 482–84
  mimetic, 222–23
  number-dependent, 204–5
  reserve, 97–98
  sexual, 121
  stabilizing, 436
  strong, 486
Selectionist-naturalist debate, 314
Self-compatibility (SC), 488
Self-fertilization, 480
Self-incompatibility, 189–90
Selfing
  coevolving levels of, 485
  evolution of increased, 484
Semiarid ecosystems, 269, 271–72
Sepiolid squid, 236–37
Sequencing
  DNA, 302–7
  polymorphism in large-scale patterns, 310
Sets, minimum, 97–98
Settlement, of dispersing organisms, 379–70
Sex-linked mimicry, 213–14
Sexual selection, 121
Sherwood number, 372
Shifting balance model, and genetic drift, 211–13
Similarity
  overall, 437–38
  testing, 6
Simulation analyses, 336–42, 503
Single large or several small (SLOSS) reserves, debate over, 92
Single nucleotide polymorphisms (SNPs), mapping, 32–34
Sister species, 17, 113, 433–34
SLOSS reserves
  See Single large or several small reserves
Small populations
  conserving, 503
  genetic hazards in, 485–86
Social evolution, culture and, 609
Soil temperature, 273–74
Solar system, biosphere evolution in, 412–14
Sorghum bicolor, 547
Sorting networks, genetic algorithms (GAs) for evolving, 602–3
Soybean, 546
Spatial scales, 90–94, 263–64
  of extinctions, 516–17
  of small reserves, 90–93

Spatial variation
in flow, 377
in mimetic selection, 222–23
Speciation, 201–34
conspecific sperm and pollen precedence and, 109–32
mimicry and, 224–25
peripheral isolate model of, 339
and reproductive barriers, 109–10
Species
coexistence and regulation of assemblage structure, 66–67
extinction of, 86
purging among populations within, 487
recently extinct, 464–65
Species-area curves, 525
Species delimitation
character-based, 352–54
polymorphism and, 351–55
tree-based, 354–55
Species richness
controlling, 287
relationship with productivity, 257–300
Specificity
evolution of determinants of, 246–47
recognition and, 241–47
Spectroscopic indicators of life, 414–16
Sperm competition, 121–22
Sperm-egg interactions, generalized scheme of, 117–18
Sperm precedence, conspecific, 109–32
Spontaneous hybridization, 540, 542, 550
Spontaneous mating, 540
Squid-vibrio associations, 235–56
modeling, 244–45
Stabilizing selection, 436
Stanton number, 372
Stock market, predicting, 597
Strategy studies, 599
Streams
in Mediterranean climate regions, 51–81
physical-biological coupling in, 363–94
Stressful environments, 242–45
String beans, 548–49
Structure-function relationships, and enzyme polymorphism, 314–15
Subspecies extinctions, 517
Sugarcane, 551
Sunflower seed, 550–51
Supergenes, 315–16
Swamping, 556
Symbionts
See Bacterial symbionts
Symbiosis
initiation of, 239–47
maintenance of stable, 251–52
Symplesiomorphies, 422
Symplocarpus, 431
Synapomorphies, 334
Synergistic epistasis, 485
Systematics
molecular, 469
polymorphisms in, 327–62
species-level, 328–29

T

Taxa
polyphyletic, 422
purging among, 487, 495–96
Taxonomic groupings, 280–83
alpha, 328–29
turnover in, 286
Templeton test, 5
Temporal variation
in flow, 377–78
genetic record of, 469
in mimetic selection, 222–23
Terrestrial ecosystems, 267–75
arctic tundra, 267, 269–70
boreal forests, 273–75
hot deserts, 269, 271–72
tropical forests, 272–73
Threatened species
See Extinctions
Total serum cholesterol level, phenotype of, 39
Toxicants, and amphibian declines, 139–40
Transgenic crops, risks of, 551–57
Trawling, sea floor, 531
Tree-based species delimitation, 354–55
Triassic, *Proganochelys* in Germanic, 16
Triosteum, 431
Tristylous species, 184–85
Triticum aestivum, 543, 545
Tritrophic effects, of parasites on hybrids, 585–86
Tropical forests, 272–73
Turbulence, 378–79
Turtles
distinction from other amniotes, 7
mode of respiration of, 15
origin and early evolution of, 1–22
sister group relationship with Sauropterygia, 17
synapomorphy with pareiasaurs, 6
Typing, non-invasive, 458

U

Ultraviolet radiation
  and amphibian declines, 135–36
Umbrella species concept, 95
Unit of conservation concern, 529
Universe, distribution of life in, 397–416
Unordered coding, 334
Unpalatability
  and attacks, 221–22
  evolution of, 205–6
  and the evolution of warning color, 205–13
Unscaled coding, 334
UPGMA, 339–41, 346
US Corps of Engineers, 92
US Fish and Wildlife Service (USFWS), 85–86
US Geological Survey (USGS), 147
UV radiation
  See Ultraviolet radiation

V

Velocity gradients, complex, 380
Vibrio fischeri, 237, 242–45
Viking life-detection experiment, 409–10

W

Warning color
  apparency-dependent, 210–11
  density-dependent, 210–11
  evolution of diversity in, 201–34
  evolution of novel, 206–13
Water
  competition for, 68–71
  See also Lakes; Seas; Streams; Wetlands
Water column entry, 367–78
Watershed-stream interactions, 55–56
Weather, and amphibian declines, 140–41
Weed evolution, 554–56
Weighting characters, 184–85
Wetlands, 266–67
  draining, 137
  herbaceous, 268
Wheat, 543, 545
Wiegela, 431
World Conservation Union, 519

Z

Zea mays, 546
Zooplankton, 265–66

CUMULATIVE INDEXES

CONTRIBUTING AUTHORS, VOLUMES 26–30

Abelson A, 28:317–39
Akashi H, 26:403–22
Alexander LE, 29:207–31
Alford RA, 30:133–65
Alvarez-Buylla ER, 27:387–421
Amyot M, 29:543–66
Anderson WB, 28:289–316
Archer SR, 28:517–44
Avise JC, 29:23–58

Barone JA, 27:305–35
Bateman RM, 29:263–92
Becker CD, 26:113–33
Beukeboom LW, 29:233–61
Boulton AJ, 29:59–81
Brower AVZ, 27:423–50
Brown JH, 27:597–623
Brumbaugh DR, 27:197–235
Buol SW, 26:25–44
Byers DL, 30:479–513

Caley MJ, 27:477–500
Carlton JT, 30:515–38
Carr MH, 27:477–500
Carroll CR, 26:69–92
Casper BB, 28:545–70
Chao L, 26:423–44
Chase JM, 28:467–94
Chinsamy A, 26:445–71
Choat JH, 29:375–403
Clark JG, 26:225–48
Clements KD, 29:375–403
Cockburn A, 29:141–77
Cole JJ, 29:503–41
Coley PD, 27:305–35
Cooper A, 30:457–77
Crandall KA, 28:437–66
Crane PR, 29:263–92
Crisci JV, 26:373–401
Crozier RH, 28:243–68
Culver DC, 26:249–68

Dafni A, 29:345–73
Décamps H, 28:621–58
del Giorgio PA, 29:503–41
Denny M, 28:317–39
de Queiroz A, 26:657–81
DeSalle R, 27:423–50
Des Marais DJ, 30:397–420
Diggle PK, 26:531–52
DiMichele WA, 29:263–92
Dodson P, 26:445–71
Dodson SI, 30:257–300
Donoghue MJ, 26:657–81
Dowling TE, 28:593–619
Downing AL, 28:467–94
Doyle J, 29:567–99

Eanes WF, 30:301–26
Ellstrand NC, 30:539–63
Embley TM, 27:569–95

Faeth SH, 29:319–43
Fairbairn DJ, 28:659–87
Farlow JO, 26:445–71
Findlay S, 29:59–81
Finelli CM, 30:363–95
Flessa KW, 26:269–99
Fong DW, 26:249–68
Foote M, 28:129–52
Forman RTT, 29:207–31
Frankignoullle M, 29:405–33
Fritts TH, 29:113–40
Fritz RS, 30:565–91

Garcia-Barrios R, 27:487–21
Gasith A, 30:51–81
Gattuso J-P, 29:405–33
Geller JB, 30:515–38
Gertsch P, 28:1–26
Gill DE, 26:423–44
Giurfa M, 29:345–73
Goodland R, 26:1–24
Gough L, 30:257–300
Grant MC, 27:237–77
Grantham TA, 26:301–21

Hancock JF, 30:539–63
Harley CDG, 27:197–235
Hart DD, 30:363–95
Hartshorn GS, 26:155–75
Hedges SB, 27:163–96
Hedrick PW, 28:55–83
Helander M, 29:319–43
Henson SA, 28:571–92
Herrera CM, 26:705–27
Highton R, 26:579–600
Hilborn R, 26:45–67
Hixon MA, 27:477–500
Hoffman CA, 26:69–92
Holt RD, 28:289–316
Howard DJ, 30:109–32
Huelsenbeck JP, 28:437–66
Hughes TP, 27:477–500
Humphries CJ, 26:93–111

Inouye DW, 29:83–112

Jackson RB, 28:545–70
Johnson FA, 26:177–99
Jones GP, 27:477–500
Joron M, 30:201–34
Joyce LA, 26:473–503
Juday GP, 30:257–300

Kane TC, 26:249–68
Kaufman DM, 27:597–623
Kearns CA, 29:83–112
Keller L, 26:631–56
Kennedy AD, 26:683–704
Kenrick PR, 29:263–92
Kidwell SM, 26:269–99
Kim J, 26:657–81
Klein J, 29:1–21
Koehl MAR, 27:501–42
Kondrashov AS, 28:391–435
Kraepiel AML, 29:543–66
Kreitman M, 26:403–22

Labandeira CC, 28:153–93
Langenheim JH, 27:1–53
Lara-Moreno C, 27:3887–421
Lawler SP, 26:505–29
Leibold MA, 28:467–94
Lenski RE, 26:553–78
Leonard JA, 30:457–77
Linhart YB, 27:237–77
Lipscomb D, 26:323–41
Lowman MD, 27:55–81
Ludwig D, 26:45–67

Mallet J, 30:201–34
Marmonier P, 29:59–81
Martinez-Ramos M, 27:387–421
McFall-Ngai MJ, 30:235–56
McGuire AD, 26:473–503
McKelvey KS, 27:135–62
McKinney ML, 28:495–516
McShea DW, 29:293–318
Melilo JM, 26:473–503
Menge BA, 27:477–500
Miller AI, 28:85–104
Mindell DP, 27:279–303
Mitchell M, 30:593–616
Mittelbach G, 30:257–300
Moore FB-C, 26:601–29
Morel FMM, 29:543–66
Morin PJ, 26:505–29
Morrone JJ, 26:373–401
Moulia C, 30:565–91
Mueller LD, 28:269–88

Nagl S, 29:1–21
Naiman RJ, 28:621–58
Neal PR, 29:345–73
Neigel JE, 28:105–28
Nelson RH, 26:135–54
Newcombe G, 30:565–91
Nichols JD, 26:177–99
Noon BR, 27:135–62
Norse EA, 30:515–38

O'hUigin C, 29:1–21
Orr HA, 28:195–218
Ostrom E, 26:113–33

Paine RT, 27:197–235
Pamilo P, 28:1–26
Parker JD, 28:55–83
Parmenter R, 30:257–300
Perkins SL, 26:423–44
Perry DA, 29:435–66
Phillips PC, 26:601–29
Polis GA, 28:289–316
Poulin R, 28:341–58
Prentice HC, 30:539–63

Ramsey J, 29:467–501
Reaka-Kudla ML, 30:515–38
Reisz RR, 30:1–22
Resh V, 30:51–81
Rhymer JM, 27:83–109
Richards SJ, 30:133–65
Rieppel O, 30:1–22
Rieseberg LH, 28:359–89
Rodda GH, 29:113–40
Ross KG, 26:631–56
Rossiter MC, 27:451–76
Rowe NP, 29:263–92
Ruesink JL, 27:197–235

Saikkonen K, 29:319–43
Sakai AK, 30:167–99
Sato A, 29:1–21
Schemske DW, 29:467–501
Scholes RJ, 28:517–44
Schwartz MW, 30:83–108
Secor CL, 28:593–619
Secord DL, 27:197–235
Seppä P, 28:1–26
Shurin JB, 28:467–94
Simberloff D, 27:83–109
Skelly DK, 27:337–63
Skúlason S, 27:111–33
Smith AB, 28:219–41
Smith TB, 27:111–33
Sniegowski PD, 26:553–78
Soulanille EL, 27:197–235
Speck T, 29:263–92
Stanley EH, 29:59–81
Stein WE, 29:263–92
Steiner CF, 30:257–300
Stevens GC, 27:597–623
Storey JM, 27:365–86
Storey KB, 27:365–86
Sullivan TJ, 29:319–43
Sun A, 27:197–235

Takahata N, 26:343–72
Taylor CE, 30:593–616
Templeton AR, 30:23–49
Thacker CE, 27:279–303
Thorén P, 28:1–26
Thorne BL, 28:27–54
Tonsor SJ, 26:601–29

Valett HM, 29:59–81
Vandermeer J, 26:201–24
Vane-Wright RI, 26:93–111
Vogler A, 27:423–50

Waide RB, 30:257–300
Walker D, 29:23–58
Waller DM, 30:479–513
Walter MR, 30:397–420
Walters CJ, 26:45–67
Warner RR, 28:571–92
Waser NM, 29:83–112
Wayne RK, 30:457–77
Wellborn GA, 27:337–63

Weller SG, 30:167–99
Wen J, 30:421–55
Werner EE, 27:337–63
Werren JH, 29:233–61
Whitlock MC, 26:601–29
Wiens JJ, 30:327–62
Williams BK, 26:177–99
Williams DM, 27:569–95
Williams PH, 26:93–111
Willig MR, 30:257–300
Wittman PK, 27:55–81
Wolf JB, 26:423–44
Wollast R, 29:405–33
Wonham MJ, 27:197–235
Wood R, 29:179–206

Yokoyama R, 27:543–67
Yokoyama S, 27:543–67